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MAY - 9 2016
CITY OF FORT WORTH
CITY SECRETARY

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
APPLICATION FOR PERMIT TO APPROPRIATE STATE WATER
(SECTION 11.121, 11.042, 11.085 **OR** 11.143, TEXAS WATER CODE)
TAC CHAPTERS 30, 50, 281, 287, 288, 295, 297 AND 299
Water Supply Division, Water Rights Permitting MC-160
P.O. Box 13087
Austin, Texas 78711-3087
Telephone (512) 239-4691, FAX (512) 239-4770
(if including a check, mail directly to P.O. Box 13088, Austin, TX 78711-3088)

Notice: This form will not be processed until all delinquent fees and/or penalties owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ are paid in accordance with the Delinquent Fee and Penalty Protocol.

1. Applicant Information.

A. Applicant Name(s): City of Fort Worth

Mailing Address: 1000 Throckmorton St.

Fort Worth, TX 76102

Telephone Number: 817-392-1234 Fax Number: _____

Email Address: jesus.chapa@fortworthtexas.gov

B. Customer Reference Number (if issued): CN600128862

Note: If you do not have a Customer Reference Number, complete Section II of the Core Data Form (TCEQ-10400) and submit it with this application.

C. Fees and Penalties

Applicant owes fees or penalties?

☐ Yes ☑ No

If yes, provide the amount and the nature of the fee or penalty as well as any identifying number:

_____

D. Lienholder Information

Provide this information on the holder of any liens on any land to which the water right would be appurtenant):

N/A

2. Dam (structure), Reservoir and Watercourse Data.

A. Type of Storage Reservoir (indicate by checking (√) all applicable)

☑ on-channel ☐ off-channel ☐ existing structure ☑ proposed structure* ☐ exempt structure**

*Applicant shall provide a copy of the notice that was mailed to each member of the governing body of each county and municipality in which the reservoir, or any part of the reservoir, will be located as well as copies of the certified mailing cards.

**TWC Section 11.143 for uses of water for other than domestic, livestock, or fish and wildlife from an existing, exempt reservoir with a capacity of 200 acre-feet or less. Please complete Paragraph 6 below if proceeding under TWC 11.143.

Date of Construction: June 2017

WATER AVAILABILITY DIV.
2016 APR 11 P 3:48
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B. Location of Structure No. 1

1) Watercourse: Unnamed Tributary to Big Fossil Creek 4

2) Location from County Seat: 14 miles in a northerly direction from Fort Worth, Tarrant County, Texas.

Location from nearby town (if other than County Seat): _____ miles in a _____ direction from _____, a nearby town shown on county highway map.

3) Zip Code: 76052

4) The dam will be/is located in the Henry Robertson Original Survey No. 1037, Abstract No. 1259 in Tarrant County, Texas.

5) Station 0+00 on the centerline of the dam is N04°E (bearing), 1375 feet (distance) from the interior corner of Henry Robertson Original Survey No. 1037, Abstract No.1259, in Tarrant County, Texas, also being at Latitude 32.9281289°N, Longitude 97.3564860°W. (Structure point calculated from GPS coordinates in NAD83 North Central Texas State Plane)

Provide the Latitude and Longitude coordinates in decimal degrees, to at least six decimal places, and indicate the method used to calculate the diversion point location.

C. Reservoir:

1) Acre-feet of water impounded by structure at normal maximum operating level: 3 acre-ft

2) Surface area in acres of reservoir at normal maximum operating level: 0.66 acres

D. Drainage Area

The drainage area above the dam is 347 acres or 0.542 square miles.

E. Other

1) If this is a U.S. Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service (SCS)) floodwater-retarding structure, provide the Site No. N/A and watershed project name N/A.

2) Do you request authorization to close the "ports" or "windows" in the service spillway?

☐ Yes ☑ No

3. Appropriation/Diversion Request (total amount of water needed, including maximum projected uses and accounting for evaporative losses for off-channel storage, if applicable).

A. Appropriated water will be used as follows:

	Purpose*	Place of Use	Acre-feet per year
1)	Irrigation	Turfgrassed areas around site	18.17 acre-ft
2)	Water Quality	Throughout site and within ponds	Any excess runoff from irrigation
3)	Landscaping	Throughout site and within channel	Any excess runoff from irrigation

*If agricultural use, list crops(s) to be irrigated:

N/A

B. Lands to be irrigated (if applicable):

1) Applicant proposes to irrigate a total of 6.35 acres in any one year. This acreage is all of or part of a larger tract(s) which is described in a supplement attached to this application and contains a total of 75.732 acres in Tarrant County, Texas. A copy of the deed(s) describing the overall tract(s) with the recording information from the county records is attached.

2) Location of land to be irrigated: In the Henry Robertson Original Survey No. 1037, Abstract No. 1259.

C. Diversion Point No. 1.

1) Watercourse: Unnamed Tributary to Big Fossil Creek 4.

2) Location of point of diversion at Latitude 32.9281289°N, Longitude 97.3564860°W, (Diversion point calculated from GPS coordinates in NAD83 North Central Texas State Plane)

Provide Latitude and Longitude coordinates in decimal degrees, to at least six decimal places, and indicate the method used to calculate the diversion point location.

also bearing N04°E, 1375 feet (distance) from the interior corner of the Henry Robertson Original Survey No. 1037, Abstract No.1259,Tarrant County, Texas.

3) Location from County Seat: 14 miles in a Northerly direction from Fort Worth, Tarrant County,Texas.
Location from nearby town (if other than County Seat): _____ miles in a _____ direction from _____, a nearby town shown on county highway map.

4) Zip Code: 76052

5) The diversion will be (check (√) all appropriate boxes and if applicable, indicate whether existing or proposed):

	Directly from stream	Existing	Proposed
x	From an on-channel reservoir		x
	From stream to an off-channel reservoir		
	From a stream to an on-channel reservoir		
	From an off-channel reservoir		
	Other method (explain fully, use additional sheets if necessary)		

6) Rate of Diversion (Check (√) applicable provision):

_X_ 1. Diversion Facility:

A. ___147___ Maximum gpm (gallons per minute)

B. ___1___ Number of pumps

C. centrifugal Type of pump

D. 147 gpm, Pump capacity of each pump

E. Portable pump _____ Yes or X No.

__2. If by gravity:

A. ____ Headgate _____ Diversion Dam _____ Maximum gpm

B. ____ Other method (explain fully - use additional sheets if necessary)

_____

_____

7) The drainage area above the diversion point is 347 acres or 0.542 square miles.

D. Return Water or Return Flow **(location and quantity information, provide Latitude and Longitude coordinates in decimal degrees to at least six decimal places and indicate the method used to calculate the diversion point location):**

Water which is diverted but not consumed as a result of the above stated use, will be returned to _____, tributary of _____ _____, tributary of _____, _____ Basin, at a point which is at Latitude _____°N, Longitude _____°W, also, bearing __°__ (direction), _____ feet (distance) from the _____ corner of the _____ Original Survey No. _____, Abstract No. _____, in _____ County, Texas.

Zip Code: _____

Estimated **annual** amount of return flow to said stream will be _____ acre-feet.

E. Surplus Water **(provide Latitude and Longitude coordinates in decimal degrees to at least six decimal places and indicate the method used to calculate the diversion point location):**

Water which is diverted but not used beneficially will be returned to _____, tributary of _____, _____ Basin at a point which is at Latitude _____°N, Longitude _____°W, also bearing _____°_____ (direction), _____ feet (distance) from the _____ corner of the _____ Original Survey No. _____, Abstract No. _____, in _____ County, Texas.

Zip Code: _____

4. Discharge Point Information **(if applicable, provide Latitude and Longitude coordinates in decimal degrees to at least six decimal places and indicate the method used to calculate the diversion point location).**

Discharge Point No. or Name: ___

A. Select the appropriate box for the source of water being discharged:

☐ Treated effluent

☐ Groundwater

☐ Other _____

B. Location of discharge point will be/is at Latitude _____° N, Longitude _____°W, also bearing ____°____, _____ feet from the _____ corner of the _____

Original Survey No. ____, Abstract No. _____, in _____ County, Texas.

What method was used to determine the Latitude and Longitude for the discharge point? (*i.e.*, GPS Unit, USGS 7.5 Topographic Map, etc.)

_____

C. Location from County Seat: ___ miles in a _____ direction from _____,

_____ County, Texas.

Location from nearby town (if other than County Seat): _____ miles in a _____

direction from _____, a nearby town shown on county highway map.

D. Zip Code: _____

E. Water will be discharged into _____ stream/reservoir,

(tributaries)_____,

_____ Basin.

F. Water will be discharged at a maximum rate of _____ .

G. The amount of water that will be discharged is _____ acre-feet per year.

H. The purpose of use for the water being discharged will be _____.

I. Additional information required:

For groundwater

1) Provide water quality analysis and 24 hour pump test for the well if one has been conducted.
2) Locate and label the groundwater well(s) on a USGS 7.5 Minute Topographic Map
3) Provide a copy of the groundwater well permit if it is located in a Groundwater Conservation District.
4) What aquifer the water is being pumped from?

For treated effluent

1) What is the TPDES Permit Number? Provide a copy of the permit.
2) Provide the monthly discharge data for the past 5 years.
3) What % of treated water was groundwater, surface water?
4) If any original water is surface water, provide the base water right number.

5. General Information.

A. The proposed ___X___ or existing _____ works will be (are) located on the land of 301 Hillshire Dr. , whose mailing address is 311 Hillshire Dr. Fort Worth, TX 76052

B. If an application for the appropriation is granted, either in whole or in part, construction works will begin within one year after such permit is issued. The proposed work will be completed within three years from the date the permit is issued.

C. A Water Conservation Plan is attached? ___X___ Yes _____ No.

D. ___X___Interbasin transfer is not requested.

_____Applicant requests authorization to transfer _____ acre-feet of water per year from the _____ Basin to the _____ Basin of which _____ acre-feet of water will be used for _____ purposes and

_____ acre-feet of water will be used for _____ purposes.

E. _____ Bed and Banks request to transfer _____ acre-feet of water per year within the bed and banks of _____, tributary of _____, _____ Basin.

F. Is this project located within 200 river miles of the coast? ____ Yes __X__ No _____ Unknown

5. Maps, plats, plans, and drawings accompany this application as required by applicable TAC Sections.

X Yes _ No. Attach additional sheets.

6. _____The dam(s) and reservoir(s) shown on the attached application was (were) constructed for domestic and livestock purposes and I/we elect to seek a permit under Section 11.143 of the Texas Water Code.

7. Provide information describing how this application addresses a water supply need in a manner that is consistent with the state water plan or the applicable approved regional water plan for any area in which the proposed appropriation is located or, in the alternative, describe conditions that warrant a waiver of this requirement.

These 3 reservoirs in series will allow irrigation to be performed with surface water runoff, not public water supply.

Applicant Name (Sign) _____ Applicant Name (Sign)

GPB Jesus J. Chapa, Assistant City Manager _____

Applicant Name (Printed) Applicant Name (Printed)

SWORN TO AND SUBSCRIBED before me this 8th day of March, 2016.

LINDA M. HIRRLINGER
Notary Public, State of Texas
Comm. Expires 02-02-2018
Notary ID 12414474-6

Linda M. Hirrlinger
Notary Public for the State of Texas

CITY OF FORT WORTH TEXAS

Attested by:

Mary J. Kayser, City Secretary

Supplemental Dam/Reservoir Information Sheet

Dam (structure), Reservoir and Watercourse Data

A. Type of Storage Reservoir (indicate by checking (√) all applicable)

☑ on-channel ☐ off-channel ☐ existing structure ☑ proposed structure* ☐ exempt structure**

*Applicant shall provide a copy of the notice that was mailed to each member of the governing body of each county and municipality in which the reservoir, or any part of the reservoir, will be located as well as copies of the certified mailing cards.

**TWC Section 11.143 for uses of water for other than domestic, livestock, or fish and wildlife from an existing, exempt reservoir with a capacity of 200 acre-feet or less. Please complete Paragraph 6 below if proceeding under TWC 11.143.

Date of Construction: June 2017

B. Location of Structure No. 2.

1) Watercourse: Unnamed Tributary to Big Fossil Creek 4

2) Location from County Seat: 14 miles in a northerly direction from Fort Worth, Tarrant County, Texas.

Location from nearby town (if other than County Seat): _____ miles in a _____ direction from _____, a nearby town shown on county highway map.

3) Zip Code: 76052

4) The dam will be/is located in the Henry Robertson Original Survey No. 1037, Abstract No. 1259 in Tarrant County, Texas.

5) Station 0+00 on the centerline of the dam is N11°W (bearing), 1120 feet (distance) from the interior corner of Henry Robertson Original Survey No. 1037, Abstract No.1259, in Tarrant County, Texas, also being at Latitude 32.9273870°N, Longitude 97.3575269°W.

(Structure point calculated from GPS coordinates in NAD83 North Central Texas State Plane)

Provide Latitude and Longitude coordinates in decimal degrees to at least six decimal places and indicate the method used to calculate the diversion point location

C. Reservoir:

1) Acre-feet of water impounded by structure at normal maximum operating level: 5 acre-ft

2) Surface area in acres of reservoir at normal maximum operating level: 1.21 acres

D. The drainage area above the dam is 361 acres or 0.564 square miles.

E. Other:

1) If this is a U.S. Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service (SCS)) floodwater-retarding structure, provide the Site No. _____ and watershed project name _____

2) Do you request authorization to close the "ports" or "windows" in the service spillway?

☐ Yes ☑ No

Supplemental Dam/Reservoir Information Sheet

Dam (structure), Reservoir and Watercourse Data

A. Type of Storage Reservoir (indicate by checking (√) all applicable)

☑ on-channel ☐ off-channel ☐ existing structure ☑ proposed structure* ☐ exempt structure**

*Applicant shall provide a copy of the notice that was mailed to each member of the governing body of each county and municipality in which the reservoir, or any part of the reservoir, will be located as well as copies of the certified mailing cards.

**TWC Section 11.143 for uses of water for other than domestic, livestock, or fish and wildlife from an existing, exempt reservoir with a capacity of 200 acre-feet or less. Please complete Paragraph 6 below if proceeding under TWC 11.143.

Date of Construction June 2017

B. Location of Structure No. 3.

1) Watercourse: Unnamed Tributary to Big Fossil Creek

2) Location from County Seat: 14 miles in a northerly direction from Fort Worth, Tarrant County, Texas.

Location from nearby town (if other than County Seat): _____ miles in a _____ direction from _____, a nearby town shown on county highway map.

3) Zip Code: 76052

4) The dam will be/is located in the Henry Robertson Original Survey No. 1037, Abstract No. 1259 in Tarrant County, Texas.

5) Station 0+00 on the centerline of the dam is N23°W (bearing), 1000 feet (distance) from the interior corner of Henry Robertson Original Survey No. 1037, Abstract No.1259, in Tarrant County, Texas, also being at Latitude 32.9269025°N, Longitude 97.3580980°W.

(Structure point calculated from GPS coordinates in NAD83 North Central Texas State Plane)

Provide Latitude and Longitude coordinates in decimal degrees, to at least six decimal places, and indicate the method used to calculate the diversion point location.

C. Reservoir:

1) Acre-feet of water impounded by structure at normal maximum operating level: 21 acre-ft

2) ,Surface area in acres of reservoir at normal maximum operating level: 3.83 acres

D. The drainage area above the dam is 368 acres or 0.575 square miles.

E. Other:

1) If this is a U.S. Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service (SCS)) floodwater-retarding structure, provide the Site No. _____ and watershed project name _____

2) Do you request authorization to close the "ports" or "windows" in the service spillway?

☐ Yes ☑ No

Supplemental Diversion Point Information Sheet

Diversion Point No. 2. (Provide a completed *Supplemental Diversion Point Information Sheet* for additional diversions)

1) Watercourse: Unnamed Tributary to Big Fossil Creek 4

2) Location of point of diversion at Latitude 32.9273870°N, Longitude 97.3575269°W,

also, bearing N11°E, 1120 feet (distance) from the interior corner of the

Henry Robertson Original Survey No. 1037, Abstract No. 1259, in

Tarrant County, Texas. **Provide Latitude and Longitude coordinates in decimal degrees, to at least six decimal places, and indicate the method used to calculate the diversion point location.**

(Diversion point calculated from GPS coordinates in NAD83 North Central Texas State Plane)

3) Location from County Seat: 14 miles in a northerly direction from Fort Worth,

Tarrant County, Texas.

Location from nearby town (if other than County Seat): _____ miles in a _____

direction from _____, a nearby town shown on county highway map.

4) Zip Code: _____

5) The diversion will be (check (√) all appropriate boxes and if applicable, indicate whether existing or proposed):

	Directly from stream	Existing	Proposed
X	From an on-channel reservoir		X
	From stream to an off-channel reservoir		
	From a stream to an on-channel reservoir		
	From an off-channel reservoir		
	Other method (explain fully, use additional sheets if necessary)		

6) Rate of Diversion (Check (√) applicable provision):

__X__1. Diversion Facility:

A. 147 Maximum gpm (gallons per minute)

1) 1 Number of pumps

2) centrifugal Type of pump

3) 147 gpm, Pump capacity of each pump

4) Portable pump _____ Yes or X No

___2. If by gravity:

A._____ Headgate _____ Diversion Dam _____ Maximum gpm

B._____ Other method (explain fully - use additional sheets if necessary)

_____

7) The drainage area above the diversion point is 361 acres or 0.564 square miles.

Supplemental Diversion Point Information Sheet

Diversion Point No. 3.

1) Watercourse: Unnamed Tributary to Big Fossil Creek 4

2) Location of point of diversion at Latitude 32.9269025°N, Longitude 97.3580980°W, also, bearing N23°W, 1000 feet (distance) from the interior corner of the Henry Robertson Original Survey No. 1037, Abstract No. 1259, in Tarrant County, Texas. **Provide Latitude and Longitude coordinates in decimal degrees, to at least six decimal places, and indicate the method used to calculate the diversion point location.**

3) Location from County Seat: 14 miles in a northerly direction from Fort Worth, Tarrant County, Texas.
Location from nearby town (if other than County Seat): _____ miles in a _____ direction from _____, a nearby town shown on county highway map.

4) Zip Code: 76052

5) The diversion will be (check (√) all appropriate boxes and if applicable, indicate whether existing or proposed):

	Directly from stream	Existing	Proposed
X	From an on-channel reservoir		x
	From stream to an off-channel reservoir		
	From a stream to an on-channel reservoir		
	From an off-channel reservoir		
	Other method (explain fully, use additional sheets if necessary)		

6) Rate of Diversion (Check (√) applicable provision):
__X__ 1. Diversion Facility:
A. 147 Maximum gpm (gallons per minute)
1) 1 Number of pumps
2) centrifugal Type of pump
3) 147 gpm, Pump capacity of each pump
4) Portable pump _____ Yes or X No

___ 2. If by gravity:
A._____ Headgate _____ Diversion Dam _____ Maximum gpm
B._____ Other method (explain fully - use additional sheets if necessary)
_____

7) The drainage area above the diversion point is 368 acres or 0.575 square miles.

Texas Commission on Environmental Quality

SYSTEM INVENTORY AND WATER CONSERVATION PLAN FOR INDIVIDUALLY-OPERATED IRRIGATION SYSTEMS

This form is provided to assist entities in conservation plan development for individually-operated irrigation systems. If you need assistance in completing this form or in developing your plan, please contact the conservation staff of the Resource Protection Team in the Water Availability Division at (512) 239-4691.

Name: City of Fort Worth

Address: 1000 Throckmorton St. Fort Worth, Tx 76102

Telephone Number: (817)392-1234 Fax: ( )

Form Completed by: Kyle McCage (James DeOtte Engineering, Inc.)

Title: Project Manager

Signature: Date: 3/8/2016

Jesus J. Chapa, City of Fort Worth Assistant City Manager

NOTE: If the plan does not provide information for each requirement, include an explanation of why the requirement is not applicable.

I. BACKGROUND DATA

A. Water Use

1. Annual diversion appropriated or requested (in acre-feet): 18.27

Type of crop (include hybrid name e.g., type of coastal Bermuda)	*Growing season (months)*	*Acres irrigated/year*
Beds (Fountain grass, Mexican feather grass)		.03
Turf Area (buffalo grass, wild flower mix)		5.28
Trees (Bur Oak, Texas Red bud)		1.04
	Total acres	6.35

2. In the table below, list the total amount of water (in acre-feet) on average that is or will be diverted monthly for irrigation during the year.

January	February	March	April	**Subtotals**
.53	.73	1.21	1.53	4.01
May	June	July	August	
2.20	2.50	2.60	2.41	9.72
September	October	November	December	
1.32	1.33	.78	.51	4.44
			Total All Months	18.17

3. Are crops rotated seasonally or annually? ☐ Yes ☒ No

If yes, please describe:

4. Describe soil type (including permeability characteristics, if applicable).

Dark brown to brown clay

B. *Irrigation system information*

1. Describe the existing irrigation method or system and associated equipment including pumps, flow rates, plans, and/or sketches of system the layout. Include the rate (in gallons per minute or cubic feet per second) that water is diverted from the source of supply.

It is proposed that three 147 gpm centrifugal pumps will be utilized to distribute storm water to landscape and bio-detention areas. During peak demand, all three pumps will operate for approximately 70 minutes per day. The irrigation system will provide water to maintain vegetation in the bio-swales, bio-detention and bio-retention during periods of low to little rain. This vegetation, along with the vegetation around the ponds, will improve water quality for storm water leaving the site. It also has the advantage of reducing the requirement for City of Fort Worth treated water for irrigation.

2. Describe the method(s) and/or device(s) within an accuracy of plus or minus 5% used to measure and account for the amount of water diverted from the source of supply.

Individual meters will be installed at each pump to measure flow diverted from the ponds.

3. Describe the specific and quantified five-year and ten-year targets for water savings including, where appropriate, quantitative goals for irrigation water use efficiency.

Quantified five-year and ten-year targets are:

a. 5 year goal 80 % system efficiency or save 47.88 acre-feet

b. 10 year goal 80% system efficiency or save 95.76 acre-feet

(Ex. System efficiencies 80 % sprinkler, 90 % LEPA, 95 % drip)

4. If there is an existing irrigation system, have any system evaluations been performed on the efficiency of the system?

☐ Yes ☒ No

If yes, please provide the date of the evaluation, evaluator's name and the results of the evaluation:

C. *Conservation practices*

1. Describe any water conserving equipment, application system or method in the irrigation system.

The system contains a rain sensor shut off device, Hunter ET system, and an IMMS (Irrigation Management Monitoring System).

2. Describe any methods that will be used for water loss control and leak detection and repair.

The IMMS reports all alarms detected within the system such a flow violations, over currents, and water window violations.

3. Describe any water-saving scheduling or practices to be used in the application of water (e.g., irrigation only in early morning, late evening or night hours and/or during lower temperatures and winds) and the utilization of soil-moisture monitoring.

Water-saving practices include rain sensor shut off, weather based irrigation controller and the Hunter ET system which calculates microclimate to produce irrigation program.

4. Describe any water-saving land improvements or plans to be incorporated into the irrigation practices (e.g., land leveling, conservation tillage, furrow diking, weed control, etc.).

N/A

5. Describe any recovery and reuse of tail water runoff.

All excess runoff that is diverted from the ponds by pumping into the irrigation system will be directed back into the ponds and not leave the system.

6. Describe any other water conservation practices, methods, or techniques for preventing waste and achieving conservation.

Used matched precipitation nozzling, prepared densograms to verify distribution, uniformity and effciency of irrigation system, developed written specs, construction documents, and details.

Best Management Practices

The Texas Water Developmental Board's (TWDB) Report 362 is the Water Conservation Best Management Practices (BMP) guide. The BMP Guide is a voluntary list of management practices that water users may implement in addition to the required components of Title 30, Texas Administrative Code, Chapter 288. The Best Management Practices Guide broken out by sector, including Agriculture, Commercial, and Institutional, Industrial, Municipal and Wholesale along with any new or revised BMP's can be found at the following link on the Texas Water Developments Board's website: http://www.twdb.state.tx.us/conservation/bmps/index.asp

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact 512-239-3282.